US Forest Service Northwest Montana
Backcountry Avalanche Advisory

For the Glacier Park and Flathead & Kootenai National Forest Areas

Avalanche advisory does not apply to developed ski areas

Issue Date:	**5:30 AM, Friday, March 23, 2012**
Valid Until:	Midnight, Friday, March 23, 2012
Next Update:	Tuesday, March 27, 2012
Issued by:	Stan Bones

This advisory is a product of the US Forest Service, US Dept. of Agriculture. Along with other snow and avalanche information, it is originally posted at http://www.fs.usda.gov/flathead. An audio summary is available via telephone at 406-257-8402

All Mountain Ranges

Avalanche Danger Summary

3 -Considerable : 5,500 to 7,500 ft. elevation, on steep, open slopes and gullies, especially in areas with significant amounts of new precipitation falling as snow or rain

2 - Mod : below 5,500

Avalanche Danger Trend

Expect a gradual downturn in dry-snow avalanche danger as conditions dry

Expect an increase in the wet-snow avalanche danger Sunday as temperatures warm and skies become partly cloudy

AVALANCHE – INSTABILITY DESCRIPTION

All Mountain Ranges - 5,500 to 7,500 ft. elevation

Danger Level	**3 - CONSIDERABLE**
Confidence	Good
Travel Advice	• Dangerous avalanche conditions • Careful snowpack evaluation, cautious route-finding, and conservative decision-making essential
Likelihood of Avalanches	• Natural slab and loose snow avalanche ***possible*** • Human triggered avalanches ***likely***

Avalanche Size & Distribution	• Small avalanches in many areas
	• Larger avalanches in specific areas
	• Very large avalanches in isolated areas
	• **Concern is steep slopes and gullies lacking vegetative and terrain anchors in areas that recently received significant new precipitation, either in the form of snow or rain**
	  ○ **Particularly slopes with a relatively thin snow cover and a basal layer of weakly bonded, eroding, faceted grains**
	  ○ **Also unstable surface slabs poorly bonded to buried wind crusts, buried graupel layers, or layers of melt-freeze ice**
	  ○ **And finally wet loose surface snow weakened by rain or warming temp's**

AVALANCHE – INSTABILITY DESCRIPTION

All Mountain Ranges – below 5,500 ft. elevation

Danger Level	2 - MODERATE
Confidence	Good
Travel Advice	• Heightened avalanche conditions on steep, open slopes and gullies, particularly those that recently were drenched with rain • Evaluate snow and terrain carefully
Likelihood of Avalanches	• Natural avalanche ***unlikely*** • Human triggered avalanches ***possible***
Avalanche Size & Distribution	• Small avalanches in specific areas • Larger avalanches in isolated areas

Because of the general nature of this advisory message, each backcountry party will always need to make their own time and site specific avalanche hazard evaluations. This advisory best describes conditions at the time of its issuance. As time passes avalanche and snow conditions may change, sometimes quite rapidly. Elevation and geographic distinctions used are approximate and transition zones between hazards exist.

Recent Mountain Weather

Summary	• This past week was another wet one as two separate Pacific storm systems passed over the region
	• Most all mountain locations received significant new snowfall
	  ○ Friday and Saturday
	  ○ Tuesday, Wednesday, and Thursday (morning)

Precipitation	• Moist, heavy snowfall has impacted most all locations
	  ○ Most impacted were the southern mtn. ranges
	  ▪ Mission, Northern Swan, Southern Whitefish, and East and West Cabinet Ranges
	  ▪ 4-5 inches of snow water equivalent received over the 7 days
	  ○ Lesser impacted were the northern mtn ranges
	  ▪ Purcell, Northern Whitefish, and Lewis and Clark Ranges
	  ▪ 2-3.5 inches of snow water equivalent received over the 7 days

Temperature	• Since Monday temperatures have been on a gradual warming trend
	  ○ Tuesday's average daily mountain temperature, 25-degrees F
	  ○ Wednesday's, 27-degrees F
	  ○ Thursday's early morning temperature at many mtn locations, 36-degrees F, generally cooling below freezing by afternoon

Wind	• Intermittent moderate to strong winds generally from the W-SW

Field Observation Locations

Thursday, 3-22-12	• Whoopee Basin, W Cabinet Range, S of Troy, on the Kootenai • Kimmerly Basin, S'ern Whitefish Range, NW of Columbia Falls • Snowslip Area, John Stevens Canyon, N of Highway 2 in Glacier Park, W of Marias Pass
Tuesday, 3-20-12	• Snowslip Area, John Stevens Canyon, N of Highway 2 in Glacier Park, W of Marias Pass

Observer Report Locations

	None Received

Avalanches Observed	**Thursday**
	• John Stevens Canyon area W of Marias Pass
	  ○ Numerous small to moderate sized wet loose slides released both naturally and triggered
	  -- Pulling down to buried melt-freeze ice layer approx. 20-inches below snow surface
	  ○ One moderate sized mostly wet, natural, slab release
	  -- Ran approx 2/3 path
	• Kimmerly Basin area of southern Whitefish Range, NW of Columbia Falls
	  ○ Glide crack opened, but not avalanched, at top of large S facing avalanche path
	  -- Full depth crack opened approx. 30-feet

Instability Concern / Avalanche Problem	*Level of Concern*	Most★★★ Less★★ Least ★
New Storm or Near Surface Snow	★★★	• Significant precipitation loading Friday and Saturday of last week, continuing again Tuesday through Thursday at most all mountain locations • Intermittent rain on snow particularly at valley levels and lower elevations **Tuesday through Thursday** *Mission, Northern Swan, Southern Whitefish, and East and West Cabinet Ranges* Approx. 2.0 to 3.5-inches of new snow water equivalent *Purcell, Northern Whitefish, and Lewis and Clark Ranges* Approx. 1.0 to 2.0-inches of new snow water equivalent Thursday morning's warming produced inverted snowpack with warmer, more dense snow overlying cooler, less dense, and more weakly bonded snow
Wind Loading	★★	• Winds have frequently been strong, intermittent, and variable, generally blowing from the S, SW, W, or NW
Recent or Persistent Buried Weak Layers	★★★	• Concern with weak layers immediately above and beneath buried melt-freeze ice crusts and with buried graupel dominated layers ○ All these weak layers when present continue to fail in shear tests • Concern also remains with basal depth hoar as surface loading continues and mid-pack layers warm and become more plastic transferring stress to the base of the snowpack
Spring Wet Snow or Melt-Freeze	★★★	• Not applicable with reestablished cloud cover • Can occur rapidly however with even just short clearing periods and rapid solar warming following a new snowfall
Wet Slab or Rain-on-Snow	★	• Concern exists with free water movement imparting surface load and impacting buried weak layers
Loose Snow	★★	• Mild temperatures generally promoting snow consolidation • **Rapid solar warming following new snowfall or rain-on-snow however, is likely to produce surface snow instability** • These slides may serve as triggers of deeper slab instability
Other Concerns		

Weather Forecast [Current NWS Backcountry Forecast]

Summary	●A weak Pacific storm system is expected Friday producing another round of snow to mid and higher terrain ●**Weak high pressure should develop Saturday and Sunday producing warmer afternoon temperatures, possibly some of the warmest temperatures yet this season** ●Return to cooler and moist conditions is possible by Monday
Precipitation	●1-2-inches of new snow is possible each 12-hr period; Friday, Friday night, and Saturday
Temperature	●**Friday to Saturday night** ○ Temperatures expected to remain mild Daytime in the 30's F Nighttime in the 20's F ●**Sunday** ○ Temperatures expected to warm significantly Daytime 40-50-degrees F
Wind	●Mild and shifting over the period to NE, E, and SE

Avalanche Outlook

Trend	• Expect a gradual downturn in dry-snow avalanche danger as conditions dry • **Expect an increase in the wet-snow avalanche danger Sunday as temperatures warm and skies become partly cloudy**
Concern	• **Wet snow instability associated with rapid solar warming on S'erly and W'erly aspects** • **Can occur at all levels of the snowpack** ○ **Loose surface snow instability** ○ **Wet slab failure deeper in the pack** ○ **Full depth failure at the ground**
Comment	• ***ALWAYS carry and know how to use your avalanche safety equipment*** ○ ***Transceiver*** ○ ***Probe*** ○ ***Shovel*** • ***Check out the site specific snow stability before jumping in or on any slope that has the potential to avalanche*** ○ ***Snow conditions are currently fairly complex*** • ***Be alert to the potential of rapid changes in weather and snow conditions*** • ***When assessing avalanche conditions focus on WIN - What's Important Now***